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| APPLICATION NO.      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 10/756,407           | 01/14/2004  | Kouta Fukui          | FS-F03223-01        | 2618             |
| 37398                | 7590        | 05/01/2007           | EXAMINER            |                  |
| TAIYO CORPORATION    |             |                      | CHEA, THORL         |                  |
| 401 HOLLAND LANE     |             |                      |                     |                  |
| #407                 |             |                      | ART UNIT            | PAPER NUMBER     |
| ALEXANDRIA, VA 22314 |             |                      | 1752                |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/756,407

Applicant(s)

FUKUI, KOUTA

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,7 and 10-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is responsive to the communication on March 27, 2007; claims 1-4, 6-7, 10-19 are pending; and claims 5, 8-9 have been canceled.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 27, 2006 has been entered.

### Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-7, 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of EP 1168066 (EP'066) in view of Siga et al (US Patent No. 4,332,889) and Hirabayashi (US 2002/0123016A1).

EP'066 discloses a photothermographic material as a whole wherein the material containing photosensitive silver halide, a non-photosensitive organic silver salt, a reducing agent, a binder and a silver-saving agent, and wherein the material exhibit an average contrast of 2.0 to 6.0. See the silver halide include any one of silver chloride, silver chlorobromide, silver iodochlorobromide, silver bromide, silver iodobromide and silver iodide on page 5, lines 24-25; the silver saving agent on page 8, formula [H], (G), (P); the reducing agent such as bisphenols

reducing agent on page 13, [0077] and 1-1-bis(2-hydroxy-3,5,5-trimethylhexane on page 64, [0225]; Table 2-1 to 2-4 on pages 77-80 which exemplified two light sensitive layer, wherein the lower contains silver saving agent; and the image gradation on page 70, Table 1 having value from 2.9 to 3.5. Page 38, [0115] discloses that "it is preferred to use sensitizing dyes exhibiting spectral sensitivity suitable for spectral characteristic of light sources of various laser imager or scanner".

Siga et al disclose in column 6, lines 43-68 the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." Hirabayashi discloses a photothermographic material having absorption maximum at 350 nm to 450 nm and different type of laser light source conventional used in the process of exposing the photothermographic material such as coherent light such as green laser of 500 nm to 600 nm and long wave laser such having emission in the near infrared region. Hirabayashi discovered that "after subjected to thermal processing, the sensitizing dyes remains on halftone dot images, producing problem that

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dot image quality or linearity is lowered, resulting to so called deterioration due to the remaining dye stain. It was found that the use of recently developed short wave laser having an emission at 350 nm to 450 nm to halftone dot images on the photothermographic material resulted in superior images to those obtained by commonly known long wave laser, without causing stains.

See page 1, [0005].

EP'066 suggest the use of silver iodide and the use sensitizing dyes exhibiting spectral sensitivity suitable for spectral characteristic of light sources of various laser imager or scanner to spectrally sensitize the silver halide emulsion, but fails to exemplified the use of the silver iodide in the photothermographic material or a use laser light source having wavelength of 350 nm to 450 nm to exposed the photothermographic material or a photothermographic material that is capable of forming an image using laser light source having wavelength of 350 nm to 450 nm. The photothermographic material exemplified in EP'066 is exposed to laser source having wavelength in the infrared region and the silver halide emulsions are spectrally sensitize in the IR region to match the wavelength of the laser source. However, the selection of silver halide such as silver iodide or the type of laser light source would have been found prima facie obvious in view of Siga et al and Hirabayashi. Siga et al discloses the composition halide containing silver iodide and silver bromide within molar ratio of 30/70 to 98/2 in order to balance the sensitivity and storage stability of the photothermographic material. The silver halide having iodide content is less sensitive to light as a result it provides more stability to the photothermographic material. Hirabayashi teaches that the problem associates with photothermographic material containing infrared dye and the improvement of

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photothermographic material that is sensitive to wavelength of 350 nm to 450 nm in term of superior halftone dot image.

It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the silver iodide taught in EP'066 or silver halide having composition taught in Siga et al in combination with the use of silver halide emulsion sensitive to laser light having wavelength of 350 nm to 450 nm to provide a photothermographic material with superior halftone dot image, and thereby provide a material as claimed.

#### ***Response to Arguments***

5. Applicant's arguments filed March 27, 2007 have been fully considered but they are not persuasive for the reason set forth in the above rejection and the reason provided in the Final Office Action on November 28, 2006.

The applicants rely on the results provide in the Declaration under 37 CFR 1.132 on March 27, 2007. It was argued that : "As shown in Table B, with the sample Nos. 3a to 3d and 114a to 114d which use a silver saving agent disclosed in EP '066 namely H-94, H-64, H-37 and H-21, color tone and film physical property (brittleness) are improved while unprocessed stock storability and image storability (improvement in print-out performance) exhibit good results compared to sample Nos. I and 113 which do not use a silver saving agent. On the other hand, with sample Nos. 116a to 116d and 118a to 118d which use silver halide emulsion K and L, unprocessed stock storability and image storability (improvement in print-out performance) remarkably deteriorate while color tone and film physical property (brittleness) are improved over sample Nos. 115 and 117. It is totally unexpected for one skilled in the art at the time the invention was made that photothermographic material that employs a silver halide emulsion

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having a high silver iodide content of 40 tool% or more achieves significantly improved effects by adding a silver • saving agent without deteriorating unprocessed stock storability and image storability (improvement in print-out performance). “.

It the Examiner's position that the results would have been expected by the worker of ordinary skill in the art at the time the invention was made. See the results of a material containing 100 mole % of silver iodide, comparative sample 1 and the inventive samples 3a to 3d. The comparative sample and the inventive sample exhibit similar film physical property, unprocessed stock storability, image storability. There is a difference in gradation and Dmax wherein the inventive sample shows higher contrast and Dmax. However, this differences would have expected the worker of ordinary skill in the art by the use of silver saving (contrast enhancing agent). The difference in color tone cannot be determined due to unavailability of the numerical date. The samples containing 40 mole % of silver iodide, comparative samples 113 and comparative samples 114a to 114d exhibits similar characteristic as samples containing 100 mole % iodide. Also, the worker of ordinary skill in the art would have expected the samples containing silver iodide of 35 mole % and 10 mole % would exhibit poor unprocessed stock storability and image storability in view of the teaching of Siga et al due to the stability of silver halide having high iodide content.

### Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tch *tc*  
2007-04-23

*Thorl Chea*  
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Primary Examiner  
Art Unit 1752